

(19)日本国特許庁 (JP)

(12) 実用新案公報 (Y2)

(11)実用新案出願公告番号

実公平7-20681

(24) (44)公告日 平成7年(1995)5月15日

(51)Int.Cl.  
G 0 3 G 15/08

識別記号 序内整理番号  
112

P I

技術表示箇所

請求項の数1(全 7 頁)

(21)出願番号 実願平1-13789  
(22)出願日 平成1年(1989)2月7日  
(65)公開番号 実開平2-104366  
(43)公開日 平成2年(1990)8月20日

(71)出願人 99999999  
シャープ株式会社  
大阪府大阪市阿倍野区長池町22番22号  
(72)考案者 稲本 公秀  
大阪府大阪市阿倍野区長池町22番22号 シ  
ャープ株式会社内  
(74)代理人 弁理士 中村 恒久

審査官 畑場 得造

(56)参考文献 特開 昭63-243978 (JP, A)  
特開 昭63-125369 (JP, U)

(54)【考案の名称】 現像装置の現像剤供給装置

1

【実用新案登録請求の範囲】

【請求項1】現像装置本体の現像剤の補給口に現像側蓋が開閉駆動自在に取付けられ、前記補給口に対応する供給口を有する現像剤カートリッジ容器が現像装置本体に着脱自在に装着され、該カートリッジ容器の供給口は、一端が自由端であつて途中で折り返されたシール材によつて密封された現像装置の現像剤供給装置において、前記シール材の折り返し部の内側にシール材の剥離に伴つて現像側蓋の駆動方向へ移動する駆動部が設けられ、シール材の剥離時に駆動部に迫動して前記現像側蓋を開方向へ移動させる追動手段と、前記現像側蓋を開状態でロックするロック機構と、シール材の剥離操作に伴つて前記ロック機構を解除する解除手段とが設けられたことを特徴とする現像装置の現像剤供給装置。

【考案の詳細な説明】

2

【産業上の利用分野】

本考案は、複写機、レーザープリンタ等において、感光体上の静電潜像を顕像化する現像装置において、現像装置本体に現像剤を供給するカートリッジ容器に備えた現像剤供給装置に関するものである。

〈従来技術〉

従来、この種の現像装置の現像剤供給装置は、現像装置本体の補給口に現像剤を供給するカートリッジ容器の供給口に、一端が自由端であつて途中で折り返されたシール材が貼着されていた。

そして、現像剤の補給時には、まず現像装置本体の現像側蓋を開け、その後、カートリッジ容器を装着して、シール材を引張り、現像剤(トナー)を補給していく。現像剤の補給後は、カートリッジ容器を外し、現像装置本体の現像側蓋を閉じていた。

**(考案が解決しようとする課題)**

しかし、上記従来技術では、現像剤の補給時に、カートリッジ容器を装着する前に現像装置本体の現像側蓋を開け、また、補給終了後は、カートリッジ容器を取り外した後に、現像側蓋を閉じるので、現像装置本体から現像剤が飛散するおそれがあり、復写機内や復写機の周囲を汚すことがあつた。

一方、補給終了後はカートリッジ容器からシール材を剥してしまって、カートリッジ容器の現像装置本体からの取り外し時等に、カートリッジ容器に残っていた現像剤が飛散して復写機内や復写機の周囲を汚す原因にもなつていた。

本考案は、上記に鑑み、現像剤の供給時における現像剤の飛散を防止し得る現像装置の現像剤供給装置の提供を目的とする。

**(課題を解決するための手段)**

本考案請求項1による課題解決手段は、現像装置本体1の現像剤2の補給口3に現像側蓋4が開閉駆動自在に取付けられ、前記補給口3に対応する供給口5を有する現像剤カートリッジ容器6が現像装置本体1に着脱自在に装着され、該カートリッジ容器6の供給口5は、一端7aが自由端であつて途中で折り返されたシール材7によつて密封され、前記シール材7の折り返し部8の内側にシール材7の剥離に伴つて現像側蓋4の駆動方向へ移動する駆動材9が設けられ、シール材7の剥離時に駆動材9に連動して前記現像側蓋4を開閉させる連動手段10と、前記現像側蓋4を閉状態ロックするロック機構40と、シール材7の剥離操作に連動して前記ロック機構40を解除する解除手段41とが設けられたものである。

**(作用)**

上記請求項1による課題解決手段において、現像剤の補給時に、シール材7を引張ると、シール材7が供給口5から剥れ、同時にシール材7の折り返し部8の内側に位置する駆動材9がシール材7に引張られて移動する。このとき、解除手段41が働き、ロック機構40が解除し、駆動材9の移動により連動手段10が現像側蓋4を追隨させ、現像側蓋4を開放し、カートリッジ容器6内の現像剤2が現像装置本体1に供給される。

次に、現像剤2の補給後は、現像側蓋4を押し戻すと、連動手段10により駆動材9が押し戻され、現像側蓋4と共にシール材7も元の位置に戻り、ロック機構40が働き、現像側蓋4が閉くのを防止できる。

そのため、カートリッジ容器6を現像装置本体1から取り外してもカートリッジ容器6側から残った現像剤2がこぼれ落ちることなく、また現像装置本体1側では、カートリッジ容器6を外したとき、既に現像側蓋4が閉状態でロックされているので、ロック機構40が働き、現像側蓋4が閉くのを防止でき、現像剤2が飛散することがない。

**(実施例)**

以下、本考案の実施例を図面に基づいて説明する。

**(第1実施例)**

第1図は本考案に係る現像装置の現像剤供給装置の第一実施例であるシール材の密封状態を示す側面断面図、第2図は同じくシール材の剥離途中の状態を示す側面断面図、第3図は同じくカートリッジ容器側の駆動材と現像装置本体側の現像側蓋との関係を示す斜視図、第4図は同じく現像装置の正面断面図である。

- 図示の如く、本考案に係る現像装置の現像剤供給装置は、現像装置本体1の現像剤2の補給口3に現像側蓋4が前後方向へ開閉駆動自在に取付けられ、前記補給口3に対応する供給口5を有する現像剤カートリッジ容器6が現像装置本体1に着脱自在に装着され、該カートリッジ容器6の供給口5は、一端7aが自由端であつて途中で折り返されたシール材7によつて密封され、前記シール材7の折り返し部8の内側にシール材7の剥離に伴つて現像側蓋4の駆動方向へ移動する駆動材9が設けられ、シール材7の剥離時に駆動材9に連動して前記現像側蓋4を開方向へ移動させる連動手段10が設けられている。前記現像装置本体1は、第4図の如く、感光体12に現像剤2(トナー)を付着させる現像ローラ13および搅拌ローラ14が内蔵された現像槽15と、該現像槽15に現像剤2(トナー)を補給すると補給ローラ16を有する補給槽17(トナーホッパー)とから構成される。前記現像側蓋4は、補給槽17の上面の補給口3に配されており、現像ローラ13の中心部の前後方向(前後方向)へ引出し自在とされ、その前端に引出し把手部19が形成されている。前記カートリッジ容器6は、第1図および第4図の如く、現像装置本体1の上側に着脱自在に取付けられるものであつて、内部に現像剤2(トナー)が内蔵されている。そして、その供給口5は、カートリッジ容器6の下面に配されている。前記シール材7は、カートリッジ容器6の下端部で供給口5の外周部に形成された外周フランジ21,22,23a,23bの下面に貼着され、他端7bが前型の外周フランジ21に貼着され、折り返し部8は後側の外周フランジ22に貼着されている。そして、シール材7の一端7aは、カートリッジ容器6の前側へ延長されて引出し用の把手としての機能を有せしめられている。前記駆動材9は、第3図および第4図の如く、平面鏡長方形状のものであつて、供給口5の左右口壁間とほぼ同一の長さに設定され、その左右両端に前記現像側蓋4に当接する係合爪2が形成されている。前記連動手段10は、前記係合爪24と、現像側蓋4の後端部で係合爪24と対応する位置に形成された左右一对の突起25とから構成される。また、前記両突起25の内側で現像側蓋4の後端部には、第3図の如く、シール材7に接触して付着した現像剤2

をクリーニングするための直方形状の第一クリーニング部材27が配設されている。さらに、前記給給口3の前面口壁部に、現像側蓋4の裏面に接触して現像側蓋4の裏面に付着した現像剤2をクリーニングする板状の第二クリーニング部材28が貼着されている。

なお、カートリッジ容器6の現像装置本体1への位置決め機構は、第1,4図の如く、現像装置本体1の給給口3の後方に形成されたカートリッジ容器6の後端外周フランジ22と係合する後側係止片31と、内壁間にカートリッジ容器6の左右帽と同一になるよう現像装置本体1の給給口3の両側に形成された左右一対の突条32と、現像装置本体1の前面で現像側蓋4の両側に形成されたカートリッジ容器6の前面外周フランジ21に当接してカートリッジ容器6の前方向の移動を阻止するストップバ33とから構成される。

上記構成において、現像装置本体1の補給槽17に現像剤2(トナー)を補給するには、まず複写機本体から現像装置本体1を前方向へ引出し、その後、カートリッジ容器6の後端外周フランジ22を斜め上方から現像装置本体1の現像側蓋4の後方係止片31に係合するようする。そして、係止片31と外周フランジ22とが係合すれば、カートリッジ容器6の前壁側を下勤する。そうすると、カートリッジ容器6は、その左右部が現像装置本体1側の突条32に、また前壁がストップバ33により規制されるため、位置決めされる。この状態を併せて示す。

次に、シール材7を第1図に矢印の方向(前方向)へ引張ると、シール材7が供給口5から剥れる。同時にシール材7の折り返し部8の内側に位置する摺動材9がシール材7に引張られて前方向へ移動する。

この移動材9の移動により、摺動材9の係合爪24が現像側蓋4の突起25に当たり、摺動材9の前方向の移動に連動して現像側蓋4が前方向へ開放するよう駆動し、カートリッジ容器6内の現像剤2が現像装置本体1に供給される。

このとき、シール材7の裏面には第一クリーニング部材27が接触しているので、シール材7に付着した現像剤2がクリーニング部材27により落され、現像剤2が外部に飛散するのを防止する。一方、現像側蓋4の裏面にも第二クリーニング部材28が接触しているので、現像側蓋4に付着している現像剤2がクリーニング部材28により落され、上記と同様に現像剤2が飛散するのを防止する。なお、摺動材9は、その係合爪24が現像側蓋4に当接しているため駆動する場合にも特別の案内手段を設ける必要はないが、摺動材9とカートリッジ容器6との間に案内手段を設けてもよいことは勿論である。

次に、現像剤2の供給後は、現像側蓋4を後方へ押し戻す。そうすると、現像側蓋4の突起25に当接する係合爪24により摺動材9が押し戻され、現像側蓋4と共にシール材7も元の位置に戻る。そのため、その後、カートリッジ容器6を現像装置本体1から取外してもカートリッジ

シ容器6側から残った現像剤2がこぼれ落ちることなく、また現像装置本体1側では、カートリッジ容器6を外したとき、既に現像側蓋4が閉じているので、現像剤2が飛散することがない。

このように、トナー補給操作がすべてカートリッジ容器6と現像装置本体1との間の密閉された状態の中で行なわれてるので、トナー飛散による汚れが生じない。

#### 【第二実施例】

第5図は本考案に係る現像装置の現像剤供給装置の第二実施例であるシール材の密封状態を示す側面断面図、第6図は同じくシール材の剥離途中の状態を示す側面断面図、第7図は同じくロック機構と解除手段との関係を示す斜視図である。

図示の如く、本実施例の現像装置の現像剤供給装置では、第一実施例の構成に加えて、現像側蓋4を閉状態でロックするロック機構40が設けられ、シール材7の剥離操作に連動してロック機構40を解除する解除手段41が設けられている。

前記ロック機構40は、第7図の如く、現像側蓋4の後端の左右側部に切欠き形成された基部を中心として左右方向に弹性を有する左右外向のフック片42と、該フック片42に係合自在に係合するよう現像装置本体1の給給口3の後端口壁部に形成された突片43から構成される。

一方、解除手段41は、前記フック片42をその基部を中心として左右方向へ駆動させるためのものであつて、第一実施例に記載の摺動材9の係合爪24と、現像側蓋4の閉状態で係合爪24に対応するようフック片42に一体形成された第一実施例記載の円柱状の突起25から構成される。ただし、ロック機構40のロック状態で突起25の中心は係合爪24の左右内壁よりも内側に位置するよう設定され、係合爪24の突起25への当接によりフック片42が基部を中止に左右内側へ駆動するよう関係付けられている。

他の構成は上記第一実施例と同様である。

上記構成において、ロック機構40および解除手段41の動作を説明すると、現像剤2の供給時にシール材7を引張ると、シール材7の折り返し部8の内側に摺動材9が第5図の状態から右方向に移動する。そうすると、第7図の如く、摺動材9の係合爪24により、現像装置本体1の現像側蓋4の突起25を押し、フック片42をその基部を中心的に内方向へ摺動させるので、フック片42が突片43から外れ、ロックを解除し、かつ第6図の如く、現像側蓋4を右方向に移動させ、現像装置本体1内に現像剤が供給される。

また、現像剤の供給後は、現像側蓋4を閉めることにより、摺動材9およびシール材7が元の位置に戻される。そして、フック片42が突片43の位置までくると、フック片42の形状およびその弹性により、フック片42は内側に摺み、突片43を乗り越えて突片43に係合し、ロックされる。

したがつて、現像側蓋4の閉状態で、現像側蓋4を卓抜で引張つても、ロック機構45が働き、現像側蓋4が開くのを防止できる。そのため、使用者が誤つて現像側蓋4を開くのを防止でき、第一実施例よりもさらに現像剤2の飛散を防止できる。

#### 【第三実施例】

第8図は本考案に係る現像装置の現像剤供給装置の第三実施例であるシール材の密封状態を示す側面断面図、第9図は同じくシール材の剥離途中の状態を示す側面断面図、第10図は同じく保持手段の構成を示す斜視図である。

図示の如く、本考案に係る現像装置の現像剤供給装置は、上記第一実施例の構成に加えて、または、第一実施例と第二実施例の構成に加えて、摺動材9を、カートリッジ容器6から現像装置本体1への現像剤2の供給後に、カートリッジ容器6内に収納保持するための保持手段45が設けられ、シール材7が現像剤2の供給後に供給口閉鎖用として用いられるものである。

前記保持手段45は、第10図の如く、摺動材9に貫通して形成された左右一対の係合孔46,46と、該係合孔46,46に係留自在に係合するようカートリッジ容器6の後壁に形成された左右一対の彈性保持爪47,47とから構成される。

他の構成は、上記第一実施例および第二実施例と同様である。

上記構成において、カートリッジ容器6をシール材7により密封した状態では、保持爪47,47がシール材7の折り返し部8を通過して係合孔46,46に係合している。

この状態から、シール材7を矢印方向に強く引張ると、シール材7の張力と保持爪47の弾性により、保持爪47,4が係合孔46,46より離脱する。シール材7をさらに引張ることにより、摺動材9およびシール材7が図中央矢印の如く、右方向へ移動し、供給口5を開放する。

摺動材9の移動に伴ない、運動手段10により現像側蓋4も開放し、カートリッジ容器6内の現像剤2は現像装置本体1に供給される。

次に、現像剤2の供給後、現像装置本体1の現像側蓋4を閉じるよう左方向へ移動すると、突起25により摺動材9が押されて元の位置に戻され、再度カートリッジ容器6の保持爪47に嵌合する。摺動材9が左方向へ移動すれば、シール材7もカートリッジ容器6の供給口5を覆うように元の状態に戻るため、シール材7は簡易的なカバーとなる。

したがつて、カートリッジ容器6を現像装置本体1から取外すときに、カートリッジ容器6内に残っている現像剤2が供給口5から漏れて飛散するのを防止でき、上記第一実施例および第二実施例よりもさらに現像剤の飛散

防止効果が大となる。

なお、本考案は、上記実施例に限定されるものではなく、本考案の範囲内で上記実施例に多くの修正および変更を加え得ることは勿論である。

例えば、上記実施例において、現像装置本体1は現像槽および供給槽から成るもので説明したが、現像装置本体を現像槽とし、この現像槽に直接カートリッジ容器を装着して現像剤を補給する現像装置においても適用できることは勿論である。

また、ロック機構40および解除手段41も上記実施例に限定されるものではなく、さらに、保持手段も上記実施例と反対に、摺動材9に保持爪47を、カートリッジ容器6側に係合孔46を配置した構成であつてもよいことは勿論である。

#### 〈考案の効果〉

以上の説明から明らかな通り、本考案請求項1によると、シール材の折り返し部の内側にシール材の剥離に伴つて現像側蓋の摺動方向へ移動する摺動材が設けられ、シール材の剥離時に摺動材に連動して現像側蓋を開方向へ移動させる追動手段が設けられており、現像剤補給操作がすべてカートリッジ容器と現像装置本体との間の密閉された状態の中で行なわれているので、現像剤飛散による汚れを防止できる。

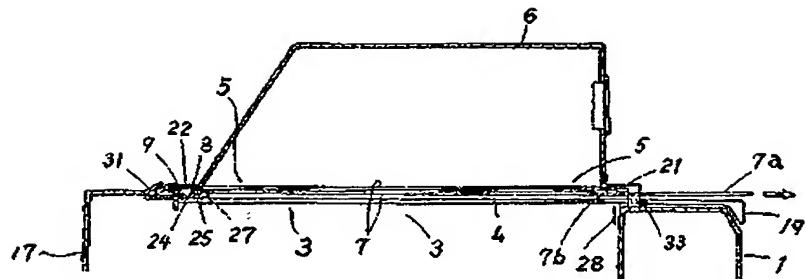
また、現像側蓋を開状態でロックするロック機構が設けられているので、使用者が誤つて現像側蓋を開くのを防止でき、さらに現像剤の飛散を防止できるといった優れた効果がある。

#### 【図面の簡単な説明】

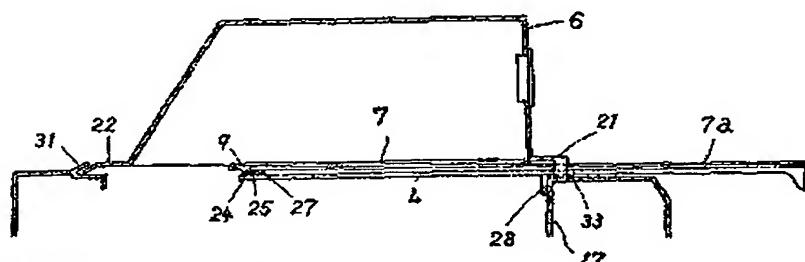
第1図は本考案に係る現像装置の現像剤供給装置の第一実施例であるシール材の密封状態を示す側面断面図、第2図は同じくシール材の剥離途中の状態を示す側面断面図、第3図は同じくカートリッジ容器側の摺動材と現像装置本体側の現像側蓋との関係を示す斜視図、第4図は同じく現像装置の正面断面図、第5図は本考案に係る現像装置の現像剤供給装置の第二実施例であるシール材の密封状態を示す側面断面図、第6図は同じくシール材の剥離途中の状態を示す側面断面図、第7図は同じくロック機構と解除手段との関係を示す斜視図、第8図は本考案に係る現像装置の現像剤供給装置の第三実施例であるシール材の密封状態を示す側面断面図、第9図は同じくシール材の剥離途中の状態を示す側面断面図、第10図は同じく保持手段の構成を示す斜視図である。

1:現像装置本体、2:現像剤、3:供給口、4:現像側蓋、5:供給口、6:現像剤カートリッジ容器、7:シール材、8:折り返し部、9:摺動材、10:運動手段、40:ロック機構、41:解除手段、45:保持手段。

【第1図】

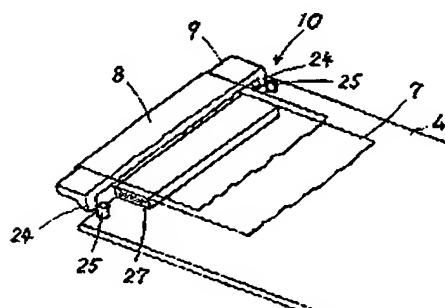


【第2図】

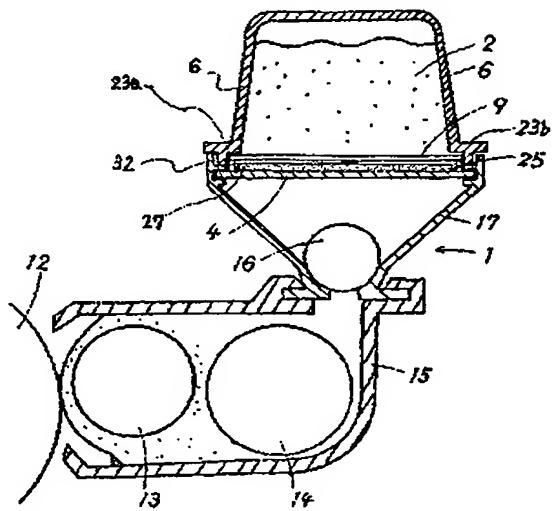


- 1:装置本体  
2:理査剤  
3:横給口  
4:横律制蓋  
5:供給口  
6:設備本カートリッジ等  
7a:端  
7:シール材  
8:封入器具  
9:摺動材  
10:連鎖手段  
40:ロバ23壁構  
41:封閉手段  
45:摺浮手段

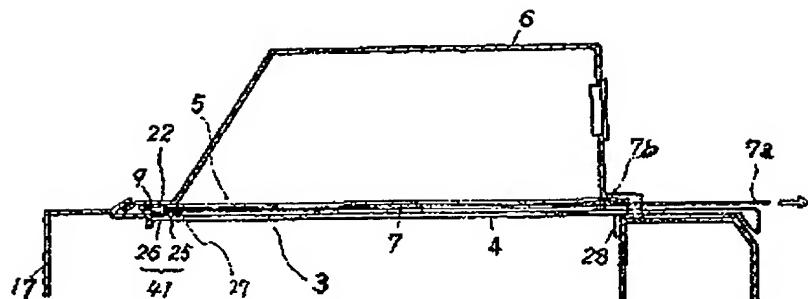
【第3図】



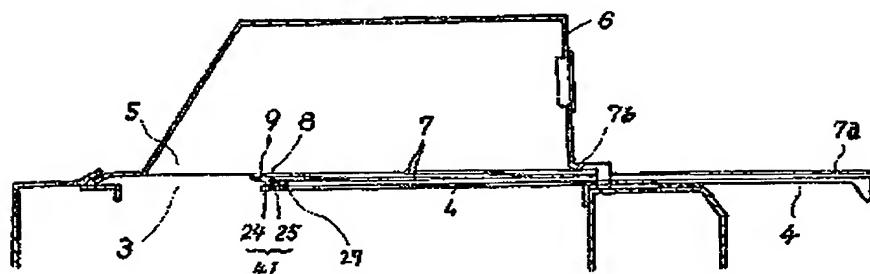
【第4図】



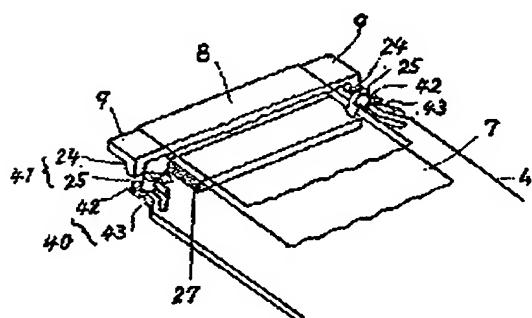
【第5図】



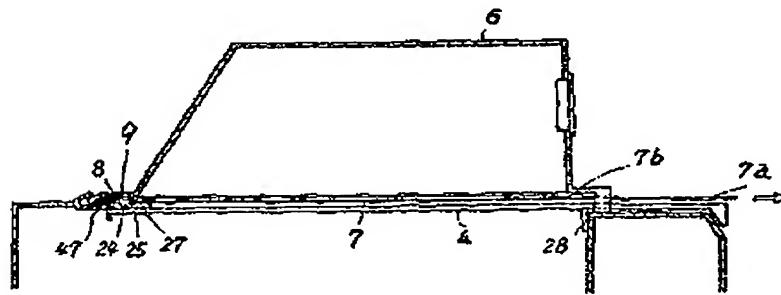
【第6図】



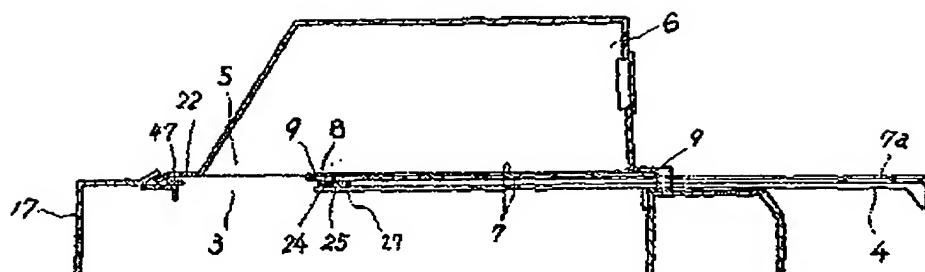
【第7図】



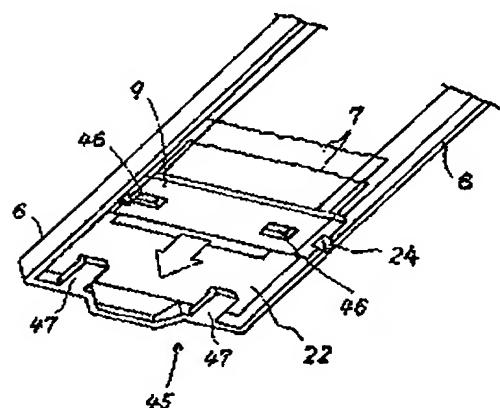
【第8図】



【第9図】



【第10図】



Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

[Detailed explanation of a design]

<Field of the Invention> This design is related with the developer feeder with which the cartridge container which supplies a developer to a developer main part was equipped in a copying machine, a LASER beam printer, etc. in the developer which develops the electrostatic latent image on a photo conductor.

The <conventional technology> The sealant from which the end was turned up by the feed hopper of the cartridge container with which the developer feeder of this kind of developer supplies a developer to the opening of a developer main part by the free end in the middle of \*\*\*\*\* was stuck conventionally.

And at the time of supply of a developer, the development side lid of a developer main part was opened first, it equipped with the cartridge container after that, the sealant was pulled, and the developer (toner) was supplied.

After supply of a developer removed the cartridge container and had closed the development side lid of a developer main part.

<the technical problem which a design tends to solve> -- before [ however, ] equipping with a cartridge container with the above-mentioned conventional technology at the time of supply of a developer -- the development side lid of a developer main part -- opening -- moreover, after a supply end -- a cartridge container -- removal -- there being a possibility that a developer may disperse from the inside of a developer main part, and soiling the circumference of the inside of a copying machine, or a copying machine behind the bottom, since a development side lid is

On the other hand, after a supply end is intermediary \*\*\*\* also to the cause which a \*\*\*\*\* developer disperses in a cartridge container and soils the circumference of the inside of a copying machine, or a copying machine at the time of removal from the developer main part of a cartridge container etc. since a sealant is removed from a cartridge container.

This design takes an example above and aims at offer of the developer feeder of the developer which can prevent scattering of the developer at the time of supply of a developer.

<The means for solving a technical problem> the technical-problem solution means by this claim 1 The development side lid 4 is attached in the opening 3 of the developer 2 of the developer main part 1 free [ opening-and-closing sliding ]. The developer main part 1 is equipped with the developer cartridge container 6 which has the feed hopper 5 corresponding to the opening 3 of the above free [ attachment and detachment ]. the feed hopper 5 of this cartridge container 6 In the developer feeder of the developer by which end 7a was therefore sealed by the sealant 7 turned up by the free end in the middle of \*\*\*\*\* A interlocking means 10 for the sliding material 9 which moves in the sliding direction of the development side lid 4 with ablation of a sealant 7 inside the clinch

English Language Translation (Computer Translation) of Examined Utility Model  
Application 07-20681 from Japanese Patent Office Website

section 8 of the aforementioned sealant 7 to be formed, and for the sliding material 9 to be interlocked with at the time of ablation of a sealant 7, and to move the aforementioned development side lid 4 in the open direction, The lock mechanism 40 which carries out the closed state lock of the aforementioned development side lid 4, and a release means 41 for ablation operation of a sealant 7 to be interlocked with and to cancel the aforementioned lock mechanism 40 are established.

<Operation> In the technical-problem solution means by the above-mentioned claim 1, if a sealant 7 is pulled at the time of supply of a developer, a sealant 7 separates from a feed hopper 5, and the sliding material 9 simultaneously located inside the clinch section 8 of a sealant 7 will be pulled by the sealant 7, and will move. At this time, the release means 41 works, the lock mechanism 40 cancels, the interlocking means 10 makes the development side lid 4 follow in footsteps by movement of the sliding material 9, the development side lid 4 is opened wide, and the developer 2 in the cartridge container 6 is supplied to the developer main part 1.

Next, it can prevent that the sliding material 9 will be put back by the interlocking means 10, a sealant 7 will also return to the original position at the development side lid 4 and \*\*\*, the lock mechanism 40 will work, and the development side lid 4 will open after supply of a developer 2 if the development side lid 4 is put back.

Therefore, without the \*\*\*\*\* developer 2 falling from the cartridge container 6 side, even if it demounts the cartridge container 6 from the developer main part 1, in the developer main part 1 side, since the development side lid 4 is already locked by the closed state when the cartridge container 6 is removed, the lock mechanism 40 works, it can prevent that the development side lid 4 opens, and a developer 2 does not disperse.

<Example> The example of this design is hereafter explained based on a drawing.

[The 1st example]

Similarly the side cross section showing the seal state of the sealant which is the first example of the developer feeder of the developer which a view 1 requires for this design, the side cross section in which a view 2 is the same and showing the state in the middle of ablation of a sealant, the perspective diagram in which a view 3 is the same and showing the relation between the sliding material by the side of a cartridge container and the development side lid by the side of a developer main part, and a view 4 are transverse-plane cross sections of a developer.

The developer feeder of the developer which starts this design like illustration The development side lid 4 is attached in the opening 3 of the developer 2 of the developer main part 1 free [ opening-and-closing sliding ] to a cross direction. The developer main part 1 is equipped with the developer cartridge container 6 which has the feed hopper 5 corresponding to the opening 3 of the above free [ attachment and detachment ]. the feed hopper 5 of this cartridge container 6 Therefore, end 7a is sealed by the sealant 7 turned up by the free end in the middle of \*\*\*\*\*. The sliding material 9 which moves in the sliding direction of the \*\*\*\*\* development side lid 4 is formed in ablation of a sealant 7 inside the clinch section 8 of the aforementioned sealant 7, and a interlocking means 10 for the sliding material 9 to be interlocked with and to move the aforementioned development side lid 4 in the open direction at the time of ablation of a sealant 7 is established.

The aforementioned developer main part 1 consists of a developer tank 15 to which the interior of the developing roller 13 and the churning roller 14 which make a developer 2

English Language Translation (Computer Translation) of Examined Utility Model  
Application 07-20681 from Japanese Patent Office Website

(toner) adhere to a photo conductor 12 was carried out, and a supply tub 17 (toner hopper) which has the supply roller 16 when a developer 2 (toner) is supplied to this developer tank 15, as shown in a view 4.

The aforementioned development side lid 4 is arranged on the opening 3 of the upper surface of the supply tub 17, a cash drawer is made free to the shaft orientations (cross direction) of the medial axis of a developing roller 13, it pulls out to the front end, and the handle section 19 is formed.

The aforementioned cartridge container 6 is attached in the developer main part 1 bottom free [ attachment and detachment ], as shown in a view 1 and the 4th view, and the developer 2 (toner) is built in \*\*\*\*\* and the interior. And the feed hopper 5 is allotted to the inferior surface of tongue of the cartridge container 6.

The aforementioned sealant 7 is stuck on the inferior surface of tongue of the periphery flanges 21, 22, 23a, and 23b formed in the periphery section of a feed hopper 5 in the soffit section of the cartridge container 6, other end 7b is stuck on the periphery flange 21 of cover mold, and the clinch section 8 is stuck on the periphery flange 22 of a posterior. And end 7a of a sealant 7 is extended to the anterior of the cartridge container 6, is pulled out, and is made to have a function as a handle of business.

The aforementioned sliding material 9 is a plane view rectangle-like thing, as shown in a view 3 and the 4th view, and it is set as the almost same length as between \*\*\*\*\* and right-and-left \*\*\*\* of a feed hopper 5, and the engagement presser foot stitch tongue 24 which contacts the aforementioned development side lid 4 is formed in the right-and-left ends.

The aforementioned interlocking means 10 consists of an aforementioned engagement presser foot stitch tongue 24 and salient 25 of the right-and-left couple formed in the engagement presser foot stitch tongue 24 and the corresponding position in the back end section of the development side lid 4.

the shape of moreover, a direct rectangle for cleaning the developer 2 which contacted and adhered to the sealant 7 in the inside of both the aforementioned salients 25 at the back end section of the development side lid 4 as shown in a view 3 -- the member 27 is arranged the first \*\*\*\*\* furthermore, the tabular which cleans the developer 2 which contacted the front mouth wall of the opening 3 of the above at the rear face of the development side lid 4, and adhered to the rear face of the development side lid 4 -- the member 28 is stuck the second \*\*\*\*\*

In addition, the positioning mechanism to the developer main part 1 of the cartridge container 6 The piece 31 of a posterior stop which is formed behind the opening 3 of the developer main part 1, and engages with the back end periphery flange 22 of the cartridge container 6 as shown in a view 1st [ the ] and 4, The protruding line 32 of the right-and-left couple formed in the both sides of the opening 3 of the developer main part 1 so that between walls might become the same as that of the right-and-left width of face of the cartridge container 6, It consists of stoppers 33 which are formed in the both sides of the development side lid 4 in the front face of the developer main part 1, and prevent movement of the front of the cartridge container 6 in contact with the front periphery flange 21 of the cartridge container 6.

In order to supply a developer 2 (toner) to the supply tub 17 of the developer main part 1, the developer main part 1 is first pulled out forward from the main part of a copying machine, and the back end periphery flange 22 of the cartridge container 6 is made to

English Language Translation (Computer Translation) of Examined Utility Model  
Application 07-20681 from Japanese Patent Office Website

engage with the piece 31 of a back stop of the development side lid 4 of the developer main part 1 from the slanting upper part after that in the above-mentioned composition. And if the piece 31 of a stop and the periphery flange 22 are engaged, the front end side of the cartridge container 6 will be lower-\*\*\*(ed). If it does so, since the front end is regulated with a stopper 33 by the protruding line 32 by the side of the developer main part 1, as for the cartridge container 6, the right-and-left section will be positioned by it again. This state is shown in Izu.

Next, if a sealant 7 is pulled in the direction of an arrow (front) to a view 1, a sealant 7 will separate from a feed hopper 5. The sliding material 9 simultaneously located inside the clinch section 8 of a sealant 7 is pulled by the sealant 7, and moves forward.

It slides so that the engagement presser foot stitch tongue 24 of the sliding material 9 may be interlocked with movement of the front of the sliding material 9 in the salient 25 of the development side lid 4 and the development side lid 4 may open forward by movement of this move material 9, and the developer 2 in the cartridge container 6 is supplied to the developer main part 1.

the developer 2 which adhered to the sealant 7 since the member 27 touched the rear face of a sealant 7 the first \*\*\*\*\* at this time -- cleaning -- it is dropped by the member 27 and prevents that a developer 2 disperses outside the developer 2 which has adhered to the development side lid 4 on the other hand since the member 28 also touches the rear face of the development side lid 4 the second \*\*\*\*\* -- cleaning -- it is dropped by the member 28 and prevents that a developer 2 disperses like the above In addition, although the sliding material 9 does not need to establish a special guidance means when sliding, since the engagement presser foot stitch tongue 24 is in contact with the development side lid 4, it is natural. [ of a guidance means being established between the sliding material 9 and the cartridge container 6 ]

Next, after supply of a developer 2 puts back the development side lid 4 back. If it does so, the sliding material 9 will be put back by the engagement presser foot stitch tongue 24 which contacts the salient 25 of the development side lid 4, and a sealant 7 will also return to the original position with the development side lid 4. Therefore, without the \*\*\*\*\* developer 2 falling from the cartridge container 6 side, even if it demounts the cartridge container 6 from the developer main part 1 after that, in the developer main part 1 side, since the development side lid 4 has already closed when the cartridge container 6 is removed, a developer 2 does not disperse.

Thus, since all toner supply operations are performed in the inside in the state where it was sealed between the cartridge container 6 and the developer main part 1, the dirt by toner scattering does not arise.

[The second example]

The side cross section showing the seal state of the sealant which is the second example of the developer feeder of the developer which a view 5 requires for this design, the side cross section in which a view 6 is the same and showing the state in the middle of ablation of a sealant, and a view 7 are perspective diagrams showing the relation between a lock mechanism and a release means similarly.

Like illustration, by the developer feeder of the developer of this example, in addition to the composition of the first example, the lock mechanism 40 which locks the development side lid 4 by the closed state is established, and a release means 41 for ablation operation of a sealant 7 to be interlocked with and to cancel the lock mechanism

40 is established.

The aforementioned lock mechanism 40 consists of a piece 42 of a hook of the right-and-left extroversion which notch formation is carried out at the right-and-left flank of the back end of the development side lid 4, and has elasticity in a longitudinal direction centering on a base, and a protruding piece 43 formed in the back end mouth wall of the opening 3 of the developer main part 1 so that it might engage with this piece 42 of a hook free [ engaging and releasing ], as shown in a view 7.

On the other hand, the release means 41 is for making the aforementioned piece 42 of a hook rock to a longitudinal direction centering on the base, and consists of an engagement presser foot stitch tongue 24 of \*\*\*\*\* and the sliding material 9 given in the first example, and salient 25 of the shape of a pillar given in the first example really formed in the piece 42 of a hook so that it might correspond to the engagement presser foot stitch tongue 24 by the closed state of the development side lid 4. However, in the state of the lock of the lock mechanism 40, the center of salient 25 is set up so that it may be located inside the edge in right and left of the engagement presser foot stitch tongue 24, and it is connected so that the piece 42 of a hook may rock a base to the right-and-left inside to a stop by the contact to the salient 25 of the engagement presser foot stitch tongue 24.

Other composition is the same as that of the first example of the above.

In the above-mentioned composition, if operation of the lock mechanism 40 and the release means 41 is explained and a sealant 7 will be pulled at the time of supply of a developer 2, the sliding material 9 will move rightward from the state of a view 5 inside the clinch section 8 of a sealant 7. Since the salient 25 of the development side lid 4 of the developer main part 1 is pushed and the piece 42 of a hook is made to rock to inboard centering on the base with the engagement presser foot stitch tongue 24 of the sliding material 9 as shown in a view 7 when it does so, the piece 42 of a hook separates from a protruding piece 43, a lock is canceled, and as shown in the 6th view, the development side lid 4 is moved rightward, and a developer is supplied in the developer main part 1. Moreover, the sliding material 9 and a sealant 7 are returned to the original position by shutting the development side lid 4 after supply of a developer.

And when the piece 42 of a hook comes to the position of a protruding piece 43, with the configuration of the piece 42 of a hook, and its elasticity, the piece 42 of a hook bends inside, overcomes a protruding piece 43, and engages with a protruding piece 43, and it is locked.

Therefore, it can prevent that the lock mechanism 40 also commits a \*\*\*\* intermediary and the development side lid 4 opens the development side lid 4 independently by the closed state of the development side lid 4. Therefore, it can prevent that a user opens the incorrect intermediary development side lid 4, and scattering of a developer 2 can be further prevented rather than the first example.

[The third example]

The side cross section showing the seal state of the sealant which is the third example of the developer feeder of the developer which a view 8 requires for this design, the side cross section in which a view 9 is the same and showing the state in the middle of exfoliation of a sealant, and a view 10 are perspective diagrams showing the composition of a maintenance means similarly.

the developer feeder of the developer which starts this design like illustration -- the

English Language Translation (Computer Translation) of Examined Utility Model  
Application 07-20681 from Japanese Patent Office Website

composition of the first example of the above -- in addition -- or the composition of the first example and the second example -- in addition, the maintenance means 45 for carrying out receipt maintenance of the sliding material 9 into the cartridge container 6 after supply of the developer 2 from the cartridge container 6 to the developer main part 1 is established, and a sealant 7 is used as an object for feed-hopper closing after supply of a developer 2

engagement of the right-and-left couple formed by penetrating the aforementioned maintenance means 45 to the sliding material 9 as shown in a view 10 -- holes 46 and 46 and this engagement -- it consists of elastic maintenance presser foot stitch tongues 47 and 47 of the right-and-left couple formed in the back wall of the cartridge container 6 so that it might engage with holes 46 and 46 free [ engaging and releasing ]

Other composition is the same as that of the first example of the above, and the second example.

the state where the cartridge container 6 was sealed by the sealant 7 in the above-mentioned composition -- the maintenance presser foot stitch tongues 47 and 47 -- the clinch section 8 of a sealant 7 -- letting it pass -- engagement -- it is engaging with holes 46 and 46

if a sealant 7 is strongly pulled in the direction of an arrow from this state -- the tension of a sealant 7, and the elasticity of the maintenance presser foot stitch tongue 47 -- the maintenance presser foot stitch tongues 47 and 47 -- engagement -- it breaks away from holes 46 and 46 By pulling a sealant 7 further, like the arrow in drawing, the sliding material 9 and a sealant 7 move rightward, and open a feed hopper 5.

With movement of the sliding material 9, the development side lid 4 is also wide opened by the interlocking means 10, and the developer 2 in the cartridge container 6 is supplied to the developer main part 1.

Next, after supply of a developer 2, if it moves leftward so that the development side lid 4 of the developer main part 1 may be closed, the sliding material 9 will be pushed by salient 25, and it will be returned to the original position, and will fit into the maintenance presser foot stitch tongue 47 of the cartridge container 6 again. In order to return to the original state so that a sealant 7 may also cover the feed hopper 5 of the cartridge container 6 if the sliding material 9 moves leftward, a sealant 7 serves as simple covering. Therefore, when demounting the cartridge container 6 from the developer main part 1, it can prevent that the \*\*\*\*\* developer 2 leaks and disperses from a feed hopper 5 in the cartridge container 6, and the scattering prevention effect of a developer serves as size from the first example of the above, and the second example further.

In addition, this design of it not being limited to the above-mentioned example and many corrections and change being added to the above-mentioned example within the limits of this design is natural.

For example, in the above-mentioned example, although the developer main part 1 consists of a developer tank and a supply tub and was explained, of course also in the developer which makes a developer main part a developer tank, equips this developer tank with a direct cartridge container, and supplies a developer, it is applicable. moreover, the thing by which the lock mechanism 40 and the release means 41 are also limited to the above-mentioned example -- it is not -- further -- a maintenance means -- the above-mentioned example and the contrary -- the sliding material 9 -- the maintenance presser foot stitch tongue 47 -- the cartridge container 6 side -- engagement -

English Language Translation (Computer Translation) of Examined Utility Model  
Application 07-20681 from Japanese Patent Office Website

- of course, \*\*\*\*\* is also good with the composition which has arranged the hole 46 <Effect of a design> According to this claim 1 a passage clear from the above explanation The sliding material which moves in the sliding direction of a \*\*\*\*\* development side lid is prepared in ablation of a sealant inside the clinch section of a sealant. A interlocking means for sliding material to be interlocked with and to move a development side lid in the open direction at the time of ablation of a sealant is established, and since all developer supply operations are performed in the inside in the state where it was sealed between the cartridge container and the developer main part, the dirt by developer scattering can be prevented.

Moreover, since the lock mechanism which locks a development side lid by the closed state is established, when it can prevent that a user opens an incorrect intermediary development side lid and scattering of a developer can be prevented further, there is the \*\*\*\*\* effect when.

[Brief Description of the Drawings]

The side cross section showing the seal state of the sealant which is the first example of the developer feeder of the developer which a view 1 requires for this design, The side cross section in which a view 2 is the same and showing the state in the middle of ablation of a sealant, the perspective diagram in which a view 3 is the same and showing the relation between the sliding material by the side of a cartridge container, and the development side lid by the side of a developer main part, The side cross section showing the seal state of the sealant which a view 4 is the same and is the second example of the developer feeder of the developer which the transverse-plane cross section of a developer and a view 5 require for this design, The side cross section in which a view 6 is the same and showing the state in the middle of ablation of a sealant, the perspective diagram in which a view 7 is the same and showing the relation between a lock mechanism and a release means, The side cross section showing the seal state of the sealant which is the third example of the developer feeder of the developer which an octavus view requires for this design, the side cross section in which a view 9 is the same and showing the state in the middle of ablation of a sealant, and a view 10 are perspective diagrams showing the composition of a maintenance means similarly.

1: A developer main part, 2:developer, the opening of 3:, 4:development side lid, 5:feed hopper, 6:developer cartridge container, 7:sealant, 8:clinch section, 9:sliding material, 10:linkage means, 40:lock mechanism, 41:release means, 45 : maintenance means.

[Utility model registration claim]

[Claim 1] A development side lid should be attached in the opening of the developer of a developer main part free [ opening-and-closing sliding ], and a developer main part should be equipped with the developer cartridge container which has a feed hopper corresponding to the opening of the above free [ attachment and detachment ], and set the feed hopper of this cartridge container to the developer feeder of the developer therefore sealed by the sealant by which the end was turned up by the free end in the middle of \*\*\*\*\*. A interlocking means for the sliding material which moves in the sliding direction of a \*\*\*\*\* development side lid to be prepared in exfoliation of a sealant inside the clinch section of the aforementioned sealant, and for sliding material to be interlocked with at the time of exfoliation of a sealant, and to move the aforementioned development side lid in the open direction, The developer feeder of the developer characterized by establishing the lock mechanism which locks the aforementioned

English Language Translation (Computer Translation) of Examined Utility Model  
Application 07-20681 from Japanese Patent Office Website

development side lid by the closed state, and a release means for exfoliation operation of a sealant to be interlocked with and to cancel the aforementioned lock mechanism.